

REDUCED FRONTAGE GARAGE

REFERENCE TO RELATED APPLICATIONS

This application claim priority to commonly owned United States Provisional Patent Application Serial No. 60/259,168 filed December 29, 2000, entitled "Reduced Frontage Garage."

TECHNICAL FIELD

The present invention relates generally to the field of residential building construction and, more particularly, relates to a reduced frontage garage that is designed to house multiple vehicles, yet includes a door that is insufficiently wide to accommodate entry and exit of all of the vehicles in parallel side-by-side relation.

BACKGROUND OF THE INVENTION

Many conventional residential home designs include a garage for parking one or more automobiles. Although two-car garages are the most popular design, one-car and three-car designs are also generally available. Each garage typically includes one or more garage doors and an associated driveway for vehicle entry and exit. Various garage designs include a front-entry plan (i.e., garage door at the front of the house), a side-entry plan (i.e., garage door at the side), and a rear-entry plan (i.e., garage door at the rear of the house). Any of these entry configurations may be located at ground level or in a drive-under configuration.

A typical two-car garage design includes a single garage door that is wide enough to simultaneously accommodate two automobiles next to each other in a parallel side-by-side relation. This provides a parking space for each vehicle, and allows each vehicle to enter and exit the garage independently. Typically, the driveway is a little wider than the width of the garage door, which allows each vehicle to enter and exit the garage even if the other vehicle is parked in the driveway in alignment with its parking space inside the garage.

When the cost of land is at a premium, it is often advantageous to minimize the size of the housing lot. When road frontage is also at a premium, it may also be desirable to minimize the width of the lot along the road frontage, which usually corresponds to the front of the house. This often eliminates the side-entry and rear-entry designs options in order to avoid occupying land adjacent to the house with a driveway. In other words, the front-entry garage design is usually preferred when minimizing the width of the housing lot is a design objective. In addition, most homeowners prefer at least a two-car garage.

Accommodating these design constraints often result in what has been termed a "snout house," which is a house with a relatively narrow front profile dominated by the presence of a two-car front-entry garage. Many people object to the appearance of this design as having a poor curb appeal. As a result, many zoning authorities have enacted regulations that prohibit or limit this type of housing design. For example, certain zoning ordinances limit the "snout house" design by requiring that the garage must occupy no more than 40-50 percent of the front profile of the house. This leaves the house designer with an undesirable choice: (1) increase the width of the house, which increases width of the lot significantly, (2) provide a side-entry or rear-entry garage, which also increases the width of the lot significantly, (3) provide only a one-car garage, which is less desirable for the homeowner, or (4) eliminate the garage entirely, which is unacceptable to most prospective home purchasers. As a result of this dilemma, housing designers and zoning officials are often at odds with each other, and solutions acceptable to both sides may be hard to come by. At a minimum, zoning ordinances that limit "snout house" designs increase the cost of these homes in certain situations, which may make home ownership unavailable to certain would-be purchasers.

Therefore, there is a need in the art for an improved residential garage design that houses multiple cars yet exhibits a reduced size garage door. More particularly, there is a need for two car garage designs with an apparent one car garage door, and for a three car garage design that has an apparent two car garage door. There is also a need for combined garage and carport designs and other innovations that improve on the present state of residential car and carport design.

SUMMARY OF THE INVENTION

The present invention meets the needs described above in a reduced frontage garage, which solves the "snout house" problem described above through a reduced frontage garage that is designed to house multiple vehicles, yet includes a door that is
5 insufficiently wide to accommodate entry and exit of all of the vehicles in simultaneous parallel side-by-side relation. In a two-car reduced frontage garage design, for example, the garage door may be only slightly larger than a one-car garage door (i.e., has "reduced frontage"). Yet the garage can still accommodate two parked vehicles. This is typically achieved by a flared interior garage shape that allows the vehicles to be
10 parked inside the garage at an angle to each other.

Generally described, the invention includes a reduced frontage garage configured to accommodate a plurality of motor vehicles. This garage includes a door that is insufficiently wide to accommodate entry of the entire plurality of vehicles in parallel side-by-side relation. The garage also includes a flared interior garage
15 enclosure defining multiple parking spaces for the vehicles in a substantially radial parking arrangement at acute angles to each other. That is, the substantially radial parking arrangement is configured to allow the vehicles to pass through the door sequentially and stop in a substantially radial parking arrangement within the garage in which adjacent vehicles are parked at acute angles to each other. This substantially
20 radial parking arrangement allows each vehicle to pass through the door and park in a designated parking space while veering the vehicle to at most one side of its orientation of straight travel. The building may also include a carport adjacent to the reduced frontage garage and accessible from a common driveway. The radial parking area may also be bifurcated by a building structure. In various configurations, the invention
25 provides for two-car, three-car, four-car and five-car designs, with and without carports, and with and without a bifurcated radial parking area. Of course, the teaching of the invention may be extended to provide for a greater number of parking spaces. In addition, although the parking spaces in the embodiments described in this specification are configured to accommodate conventional automobiles, such as cars,
30 light trucks and sport utility vehicles, the parking spaces may alternatively be configured to accommodate other types of motor vehicles, such as limousines, "humvees," other types of oversized passenger vehicles, golf carts, riding lawn mowers, motorcycles, snowmobiles, trucks, boats, and so forth. Although a virtually limitless number of

design options may be implemented according to the present, several preferred designs configured to accommodate multiple conventional automobiles are described in detail to illustrate the invention.

For example, one parking place in the garage may be configured in a substantially straight-in orientation of the garage 12, which is typically in alignment with the axis of the driveway immediately in front of the garage, whereas the second parking place may be at configured at an angle of twenty degrees or so with respect to the orientation of the garage. The flared interior configuration of the interior of the garage provides additional room inside the garage to accommodate the second vehicle, which turns slightly as it passes through the garage door. This configuration allows each vehicle to be driven into the garage through the same door, with one vehicle pulling into the straight-in parking place, and the other vehicle veering off slightly into the angled parking place.

The basic two-car reduced frontage garage design described above may be extended to provide a three-car, four-car, or higher number-car design. In these designs, one of the parking spaces is typically in a straight-in configuration with respect to the orientation of the garage (and the axis of the driveway), and the other parking spaces angle away from the door with increasing angular offset as the parking spaces move further away from the straight-in configuration. In all cases, however, the reduced frontage garage is designed to house multiple vehicles, yet includes a door that is insufficiently wide to accommodate entry and exit of all of the vehicles in simultaneous parallel side-by-side relation.

In addition, the reduced frontage garage is deployed as part of a single-family detached dwelling. This distinguishes the reduced frontage garage from large multi-car garages, such as those which are often provided for apartment buildings and condominiums. Unlike these large multi-car garages, each parking space in a reduced frontage garage has its longitudinal axis directed toward the garage door, and preferably toward the center portion of the garage door. This allows a vehicle to enter and exit each space without having to turn once inside the garage. That is, a vehicle pulling into a parking space in the reduced frontage garage may complete a turn inside the garage that was started outside the garage, but the garage is not large enough to allow the vehicle to first pull into the garage and then start a turn into a parking space.

Similarly, the garage is not large enough to allow the vehicle to first pull into the garage and then make multiple turns to drive into a parking space.

To facilitate access to the various parking places, the garage door may be angled somewhat with respect to perpendicular to the axis of the driveway. For example, in the two-car garage design described above, with a first straight-in parking space and a second parking space at a 20 degree angle with respect to the axis of the driveway, the garage door may be at a 10 degree angle with respect to perpendicular to the axis of the driveway. That is, the garage door may be at a 100 degree angle with respect to the axis of the driveway.

The reduced frontage garage design described above typically provides a portion of garage that is "hidden" behind house frontage. This house frontage can be used for various purposes, such as to provide a decorative façade to satisfy zoning requirements, to provide a front door and foyer to the house, to provide a pedestrian door to the garage, or to provide an auxiliary room for storage, water heater and other utilities, a mud room, a laundry bathroom, or some other amenity that the homeowner may desire.

It will be appreciated that the reduced frontage garage design may be designed with many alternatives and options. For example, although a single front-entry garage door incorporated at the front of a home is typically preferred to minimize the lot size, the reduced frontage garage may alternatively be used in side-entry and rear-entry configurations, and for ground-level or drive-under configurations (and even a drive-over design, if desired for some reason). Although a design with one garage door is typically the most cost effective option, the reduced frontage garage may also include multiple garage doors, and may include one or more pedestrian doors into the house or to the outside in various locations.

In view of the foregoing, it will be appreciated that the reduced frontage garage avoids the drawbacks of conventional residential garage designs. The specific techniques and structures employed by the invention to improve over the drawbacks of the prior scissors lifting devices and accomplish the advantages described above will become apparent from the following detailed description of the embodiments of the invention and the appended drawings and claims.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a front view of typical single-family residence with a reduced frontage two-car garage.

5 FIG. 2 is a front view of three typical single-family residence standing side-by-side, each with reduced frontage two-car garage.

FIG. 3 is a schematic illustration of a typical floor plan for a reduced frontage two-car garage.

FIG. 4 is a schematic illustration of a second typical floor plan for a reduced frontage two-car garage.

10 FIG. 5 is a schematic illustration of a third typical floor plan for a reduced frontage two-car garage.

FIG. 6 is a schematic illustration of a floor plan for a reduced frontage two-car garage having a garage door that is angled with respect to the front siting of the building.

15 FIG. 7 is a schematic illustration of a floor plan for a reduced frontage two-car garage having a garage door that is parallel with respect to the front siting of the building.

FIG. 8 is a schematic illustration of the floor plan for a reduced frontage two-car garage positioned adjacent to a carport.

20 FIG. 9 is a schematic illustration of a floor plan for a reduced frontage two-car garage positioned adjacent to a covered carport.

FIG. 10A is a front view of typical single-family residence with a reduced frontage three-car garage.

25 FIG. 10B is a front view of second typical single-family residence with a reduced frontage three-car garage.

FIG. 10C a schematic illustration of a floor plan for a typical single-family residence with a reduced frontage three-car garage.

FIG. 11 is a schematic illustration of a second typical floor plan for a reduced frontage three-car garage.

30 FIG. 12 is a schematic illustration of a third typical floor plan for a reduced frontage three-car garage.

FIG. 13 a schematic illustration of a floor plan for a typical single-family residence with a reduced frontage four-car garage.

FIG. 14 a schematic illustration of a floor plan for a typical single-family residence with a reduced frontage five-car garage.

FIG. 15 a schematic illustration of a floor plan for a typical single-family residence with a reduced frontage two-car garage adjacent to a carport.

5 FIG. 16 a schematic illustration of a floor plan for a typical single-family residence with a reduced frontage three-car garage adjacent to a carport.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

The present invention may be embodied in a reduced frontage two-car garage
10 that accommodates two cars but presents the appearance of a single-car garage when viewed from the street. An important advantage of the reduced frontage garage is the relative reduction in the dominance of the garage in the "snout house" design, which allows the improved configuration to satisfy certain zoning ordinances without increasing the size of the width of the house or the lot. In a typical reduced frontage
15 two-car configuration, the garage door may be of a standard single width design or may be of slightly larger width than the current standard. This reduces the cost of the garage door with respect to a standard two-car garage.

The reduced frontage garage also allows the use of a single-width driveway to service the multiple parking spaces within the structure. This decreases the width and
20 cost of the driveway, which in turn increases the available space in the front of the house for a lawn and landscaping. This advantage maximizes attractive architectural and landscape design elements, while minimizing the relatively unattractive driveway and garage door elements. Removing a substantial portion of the garage from the frontage of the home may also allow a porch, extended foyer, or garden to be added to
25 the front of home. In this manner, the reduced frontage garage offers a home with increased livability without incurring the cost required to increase the width of the house or lot.

The landscaping about the front of the home also benefits from the use of a single garage opening. The single door design allows the use of a more narrow
30 driveway leading from the street which directly increases the available area for yard, shrubs or other landscaping details. The design also aids in locating the driveway to the side of the lot where it may be less visually intrusive. Hence, the design provides an overall benefit in the amount of greenery visible from the street. This effect is

especially beneficial in narrow lot applications where the result is a more attractive home and neighborhood.

In the interior of the home, the floor plan may take advantage of the available depth in a typical structure while minimizing the frontal exposure of the garage. For example, the entry foyer may be enlarged to accommodate a vaulted ceiling with a wide sweeping stair design, or an interior room along the front of the home may be enlarged.

Within the garage interior, the flared design results in a more efficient use of the space. The use of a narrow entranceway, which then flares out into a parking area within the structure, results in an increase in the floor space available for storage and utility purposes. With the vehicle parking spaces angled apart from one another, more room is available at either side of a parked vehicle when compared to conventional designs. The increased space simplifies getting into and out of a vehicle and results in less inadvertent bumps and attendant damage to the vehicle sides and garage walls. Also, by locating the vehicle parking spaces deeper within the structure, the invention results in more space available behind a parked vehicle, which simplifies tailgate loading and unloading.

In a conventional two door garage design, the structural support between the doors is often struck by a vehicle due the narrow nature of the individual doors and the proximity of the support. The angled entrance of the invention eliminates the problematic center structural support while still providing a straight line approach to the vehicle parking spaces. In addition, an interior structural support may be readily placed at the back of the garage area between the parking spaces. A support in this location more efficiently provides rigidity to the structure and will also serve to visually divide the parking area. In this position, the support is relatively safe from vehicle impact since it is positioned at the widest point of the parking area, and a vehicle will be moving slowing as it approaches the back wall of the garage.

While providing the noted aesthetic and structural benefits, the present invention also reduces the overall home construction and maintenance costs. When compared to traditional garage designs, the purchase and installation of a single width garage door and opener is less expensive and eliminates the functional duplication associated with multiple garage doors. Additionally, the more narrow single width garage opening of the design requires a smaller support header across the opening and results in a more rigid overall structure. The invention also results in a more energy efficient

design. When closed, a garage door does not typically provide the insulating properties of an exterior wall and the multi-panel nature of a folding door provides numerous opportunities for outside air infiltration. By reducing the quantity or size of the garage openings, the energy loss is proportionally reduced.

5 Turning now to the drawings, in which like numerals represent like elements in the several figures, FIG. 1 is a front view of typical single-family residence 10 with a reduced frontage two-car garage 12. This illustration shows the exterior appearance of the reduced frontage two-car garage 12, which includes a garage door 14 that is substantially smaller than a standard two-car garage door. That is, the garage door 14
10 is not wide enough to accommodate two standard automotive vehicles in parallel side-by-side relation. In practice, the garage door 14 may be approximately the size of a standard one-car garage door, or it may be slightly larger than a standard one-car garage door. In addition the garage door 14 may be parallel to the siting of the side 16 of the residence 10 in which the door is located, or it may be angled with respect to the
15 siting of the side of the residence in which the door is located. For example, an angle of ten degrees (10°) works well for many applications and facilitates ingress and egress of the vehicles through the door 14.

The residence 10 also includes a driveway 18 that is slightly wider than the garage door 14 and curves slightly away from the outer edge of the door in the area
20 about ten feet or so immediately in front of the door to accommodate veering one or both of the vehicles as they pass through the door. In addition, the reduced frontage two-car garage 12 may be located in any side of the residence 10, such as the front, rear or side location. And the reduced frontage two-car garage could be located in any floor of the residence 10. In addition, a similar reduced frontage two-car garage 12
25 could be deployed as a stand-alone structure or as part of a building other than a single-family residence, but the reduced frontage garage is best suited for use as part of a single-family residence, and is best located at grade or ground level, which places the garage in the basement or first floor of the residence in most applications.

FIG. 2 is a front view of three typical single-family residences 10a-c standing
30 side-by-side, each with a reduced frontage two-car garage 12a-c. In this configuration, the reduced frontage two-car garage allows greater use of the available road frontage that would be possible if the residences included standard two-car garages. For example, the residences 10a-c may each be thirty feet wide, located on a lot with forty

feet of frontage, and still have an acceptable ratio between the garage door and the front sides of the residences. In many applications, this configuration will satisfy zoning regulations that residences with standard two-car garages could not have met without increasing the width of each residence, or the width of each lot, or increasing both. In addition, the residences 10a-c are shown on a twenty five percent grade, which facilitates locating each reduced frontage two-car garage 12a-c in the basement of each residence, resulting in very efficient utilization of the land and building space and an associated saving in construction costs.

FIG. 3 is a schematic illustration of a typical floor plan for the reduced frontage two-car garage 12. In this configuration, the garage door 14 is positioned at an angle of approximately ten degrees (10°) with respect to the siting of the side 16 of the residence in which the door is located. The garage 12 includes two parking spaces 20 and 22 that may be accessed through the garage door 14. Specifically, the parking space 20 is positioned "straight in" in that it is not angled with respect to the orientation of the garage, which is substantially aligned with the driveway 18. The parking space 22, on the other hand, is located at an angle of approximately twenty degrees (20°) with respect to the orientation of the garage. The driveway 18 bows away from the garage 12 slightly to facilitate veering of a vehicle into the parking space 22. In addition, once parked the orientation of straight travel of each vehicle points back toward the garage door 14.

In this specification, the term "radial parking configuration" is used to indicate that the parking spaces 20 and 22 are positioned at an angle with respect to each other, and that each vehicle's orientation of straight travel points back toward the garage door 14. This radial parking arrangement advantageously allows each vehicle to pass through the door 14 and park in a designated parking space, 20 or 22, while veering the vehicle to at most one side of its orientation of straight travel. In other words, neither vehicle parking in spaces 20 or 22 has to veer toward one side first, and then toward the other side, as would be required to park in two parallel side-by-side parking spaces in a conventional large scale parking lot. The flared configuration of the garage 12, in which the rear of the garage 24 is substantially wider than the garage door 14, accommodates the radial parking configuration within the garage.

It should also be noted that the specific floor plan shown in FIG. 3 includes a pedestrian door 26 adjacent to the garage door 14 and a stair well 28 down to the

garage 12 adjacent to the pedestrian door 26. Thus, this configuration is typical for a floor plan in which the reduced frontage garage 12 is located in a basement. In various configurations, the area 30 into which the door 26 leads from the garage 12 may be an outdoor space, such as a garden or carport, or it may be an interior space, such as a storage or utility room. Those skilled in the art will appreciate that the floor plan shown is one of a myriad of possibilities, and that the reduced frontage garage 12 may be accompanied by any other configuration or rooms, doors, utilities, accessories and other building features that the designer may incorporate into the building design.

FIG. 4 is a schematic illustration of a second typical floor plan 40 for a reduced frontage two-car garage. This configuration is typical for a floor plan in which the reduced frontage garage 12 is located in the first floor of a residence that does not include a basement. Again, as in all floor plans and building views shown or described in this specification, this particular floor plan is one of many possible configurations, and the reduced frontage garage 12 may be accompanied by any other configuration or rooms, doors, utilities, accessories and other building features that the designer may incorporate into the building design.

For example, FIG. 5 is a schematic illustration of a third typical floor plan 50 for a reduced frontage two-car garage 12. In this configuration, the garage 12 is located toward the center of the floor plan, which may be preferable for some residential configurations. In this particular arrangement, both parking spaces 52 and 54 veer somewhat, such as approximately 15 degrees, one to each side of the straight-in orientation of the garage 12. This produces a symmetrical radial parking configuration that may be pleasing in certain applications.

As another example, FIG. 6 is a schematic illustration of a floor plan 60 for a reduced frontage two-car garage 12 having a garage door 14 that is angled with respect to the front siting 16 of the building. In addition, FIG. 7 is a schematic illustration of a floor plan 70 for a reduced frontage two-car garage 12 having a garage door 16 that is parallel with respect to the front siting 16 of the building.

FIG. 8 is a schematic illustration of the floor plan 80 for a reduced frontage two-car garage 12 positioned adjacent to a carport 82. In this configuration, the garage 12 and the carport 82 may be accessed by a common driveway 18. In addition, in this configuration the carport 82 is uncovered.

FIG. 9 is a schematic illustration of a floor plan **90** for a reduced frontage two-car garage **12** positioned adjacent to a covered carport **92**. This carport may be partially or fully covered, and it may be covered by a roof or another portion of the building housing a room or other structure. In this configuration, the garage **12** and the carport **92** may be accessed by a common driveway **18**.

FIG. 10A is a front view of typical single-family residence **100** with a reduced frontage three-car garage **102**. This garage shares the flared garage and radial parking configuration design elements described previously with reference to the reduced frontage three-car garage **12**. FIG. 10B is a front view of second typical single-family residence **100'** with a similar reduced frontage three-car garage **102**. FIG. 10C a schematic illustration of a typical floor plan for the reduced frontage three-car garage **102**. FIG. 11 is a schematic illustration of a second typical floor **110** plan for a reduced frontage three-car garage **102**. FIG. 12 is a schematic illustration of a third typical floor plan **120** for a reduced frontage three-car garage **102**.

FIG. 13 is a schematic illustration of a floor plan **130** for a typical single-family residence with a reduced frontage four-car garage **132**. FIG. 14 is a schematic illustration of a floor plan **150** for a typical single-family residence with a reduced frontage five-car garage **152**.

FIG. 15 is a schematic illustration of a floor plan **150** for a typical single-family residence with a reduced frontage two-car garage **152** adjacent to a carport **154** in which the garage is bifurcated by a building structure **156**. Despite the bifurcation of the parking area, this configuration shares this garage shares the flared garage and radial parking configuration design elements described previously with reference to the to the reduced frontage three-car garage **12**.

FIG. 16 a schematic illustration of a floor plan **160** for a typical single-family residence with a reduced frontage three-car garage **162** adjacent to a carport **164** in which the garage is bifurcated by a building structure **166**. Again, despite the bifurcation of the parking area, this configuration shares this garage shares the flared garage and radial parking configuration design elements described previously with reference to the to the reduced frontage three-car garage **12**.

It should be understood that the foregoing relates only to the exemplary embodiments of the present invention, and that numerous changes may be made

therein without departing from the spirit and scope of the invention as defined by the following claims.